



STENNIS SPACE CENTER

Small Spacecraft Technology Initiative Fact Sheet

NASA Headquarters has selected the John C. Stennis Space Center (SSC) in South Mississippi to participate in the development of two small demonstration satellites for the Small Spacecraft Technology Initiative (SSTI). Representing a new generation of low-cost spacecraft loaded with state-of-the-art instruments, each satellite will transmit high-quality data to demonstrate next-generation remote sensing technology.

Named after the explorers Lewis and Clark, these two satellites meet NASA's "faster, better, cheaper" philosophy by going from the initial proposal to the launch pad in 24 months or less. The plan is for the two satellites to be in orbit in the summer of 1996. Also, because they are smaller and lighter than present satellites, they cost several million dollars less to launch, making it less expensive to put newer technology into orbit.

Personnel from the Commercial Remote Sensing Program (CRSP) office at SSC are working closely with the two teams chosen to build, launch and operate both satellites-TRW Inc. of Redondo Beach, Calif., and CTA of Rockville, Md. For years, Stennis employees have been working with remote sensing data and instrumentation to find practical uses for the data and to bring this technology and its applications into the commercial sector.

Stennis Space Center will serve as the primary storage facility for the data from the two satellites and will process the data for team partners. The CRSP office is also working closely with the teams in developing and testing commercial uses of satellite data in the marketplace, so when this modern technology becomes common practice, the marketplace will be ready to use it.

Many applications of remote sensing, such as assisting with disaster relief efforts, monitoring the environment and providing potential land sites for industry, require that data be received on Earth as quickly and clearly as possible. Since they are not operational satellites, but rather technology demonstration platforms, Lewis and Clark will show how the state-of-the-art remote sensing devices will provide data more efficiently and effectively.

In conjunction with this project, Stennis Space Center personnel have been coordinating education

programs for local universities and high schools to spark interest in up and coming engineers and scientists. The mission of the SSTI education initiative is to prepare students for careers that employ science and advanced technologies using NASA-sponsored tools through community-focused application projects.

The program introduces students and faculty to the concepts and tools of remote sensing and geographic information systems. Students use remotely sensed imagery collected over their local community in combination with other data sources to address issues or problems native to their area. Mississippi students involved in the SSTI education initiative are from Jackson State University in Jackson, Pearl River Community College in Poplarville and W.P. Daniel High School in New Albany.

Though the Small Spacecraft Technology Initiative is presently funded for three years--two years to build and one year in orbit--the satellites have the capability to remain in orbit for five years or more. While in orbit, each satellite's remote sensing instruments are designed for separate missions, which should prove more cost-effective and efficient than previous methods.

The TRW-led satellite, "Lewis," will gather data valuable in Earth science activities and commercial business opportunities. Using an advanced hyperspectral imaging system, a device that measures light far beyond the boundaries of the human eye, Lewis will have the capabilities to assess and qualify information, such as determining the optimum time to harvest crops, measuring the effects of oil spills and providing information to be used in enforcing environmental regulations.

"Clark" led by the CTA team, carries a high-resolution optical element with stereo imaging capabilities and a separate instrument that maps global sources. Clark's capabilities will be helpful in areas such as finding optimum sights for airports and utility lines as well as pinpointing the sources of pollutants.

Both spacecraft will carry additional instruments that will provide global atmospheric pollution information for use by NASA's Mission to Planet Earth program. This program is comprised of a constellation of satellites with the mission to monitor the Earth's atmospheric and geological conditions.

For more information about NASA's Small Spacecraft Technology Initiative, contact the Stennis Space Center Commercial Remote Sensing Program Office at (601) 688-2042.



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Document: FS-SSC-004 (9510)
Modified: October 1995



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